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El Palo Alto, the Landmark Redwood Tree

The "El Palo Alto" is a Coast Redwood tree which is located on the banks of the San Francisquito Creek near the railroad tracks where they cross Alma Street in north Palo Alto. El Palo Alto is Spanish for "tall stick." El Palo Alto is the namesake of the City of Palo Alto, and the tree has become a historical landmark. This paper will examine the following topics: What are the Redwood species, where do Redwood trees thrive, how is Redwood useful, why is the El Palo Alto tree historically significant and what efforts have been taken to preserve coast Redwoods?

Varieties of Redwoods

The redwood has been California's official state tree since 1937. There are three species of Redwood trees: Dawn Redwood, Giant Sequoia, and Coast Redwood. These species share a common ancestry and, based on fossil evidence, Redwoods are descended from a group of conifers that existed in Europe, Asia and North America in the Jurassic Period more than 145 Million years ago when dinosaurs roamed the Earth. The Dawn Redwood is found in central China. The Giant Sequoia is found on the western slopes of the Sierra Nevada Mountains in Central California and the Coast Redwoods are found along the Northern California Coast and the southern coast of Oregon. All Redwoods are cone-bearing trees. They get their name from their reddish-brown bark and the red color of their heartwood.

Coast Redwoods

Coast Redwoods, aka *Sequoia Sempervirens*, are found along with coast from southern Oregon to Central California, usually not more than 50 miles inland and only as far as the coastal climate has its influence. Coast redwoods receive much of their water and nutrients from fog drippings. These trees also rely on fog to protect them from summer drought conditions. They also require lots of winter rain and moderate year-round temperatures.

Coast Redwoods are the world's tallest trees; they can grow to a height of 379 feet or more and to a diameter of 26 feet. They are evergreens and their cones shed in one to two years. These trees reproduce by seed or sprout. The cones are about an inch long and they produce tiny seeds about the size of a tomato seed. Each Redwood tree can produce 100,000 seeds annually,

but the germination rate is very low. Redwoods grow more successfully by sprouts that form around the base of the trees. When the parent tree dies, a new generation of trees rise, creating a circle of trees; these tree circles are often called fairy rings. The seedlings are shade-tolerant but frost sensitive; these trees require abundant moisture and that is why you see Redwoods growing along creeks and rivers.

Redwood trees are naturally resistant to insects, fungi and fire because they have a high percentage of tannin and they do not produce resin or pitch. Their thick bark also provides protection and insulation.

Early Logging & Shipping

Early California settlers used Redwood sparingly. The Spaniards preferred adobe to wood, but large Redwood beams were utilized in churches and mission buildings.

The Russians built their fur-trade colony at Fort Ross almost entirely of Redwood. Due to their immense size, Redwood trees were difficult to handle with primitive tools. It sometimes took a 2-man chopping team six 12-hour days to cut down a Redwood tree. Sawmills began to appear in the San Francisco area in about 1850. The Redwood lumbering industry grew quickly with the improvement of American tools and skills and the huge demand for wood created by the gold rush.

In the 1880s, steam revolutionized the logging industry. A steam donkey or Dolbeer Donkey was a steam-driven winch that could move a log better than an ox. The steam donkey was used to haul the felled Redwood tree to a barge. The railroad steam engines moved logs to the mill. Steam schooners were loaded with logs on the Mendocino coast.

Since the discovery of gold in California, many California towns were built primarily with Redwood. Lumber from coast Redwood trees has been used for building homes, shingles, furniture, railway cars, railroad ties, electrical poles, posts, bridges, boxes, and pencils.

About one quarter of the lumber now cut in California is Coast Redwood from a region of about one million acres. At the average rate of production, it is estimated that our Redwood forest is available to supply lumber for another 100 years.

Advantages of building with Redwood

Redwood is one of the strongest natural building materials and is five times stronger than plastic deck products. Redwood stands up to the elements as it is naturally resistant to insects and decay. It does not warp and split easily, and it stays comfortable on your feet on a hot day.

Redwood lumber has long had the reputation of being one of the slowest woods to burn, and for that reason it is one of the safest materials for wooden houses. In does not kindle into a blaze quickly, and the wood is so absorbent that it takes in water almost immediately. Redwood houses will burn, but they are less likely to burn than buildings constructed of almost any of the other woods.

History of El Palo Alto

El Palo Alto is estimated to be 1083 or 1084 years old and currently stands at 110 feet tall.

Before the European explorers arrived, the land around El Palo Alto was home to the Ohlone Native Americans. In 1769, according to folklore, the Portola expedition (63 men and 200 horses and mules led by Spanish explorer Gaspar de Portola) camped near the El Palo Alto. Portola and his explorers left San Diego in search of Monterey but they bypassed Monterey and discovered the San Francisco Bay instead; since the bay was too large to circumnavigate, Portola ended his search in the Palo Alto area and then returned to San Diego.

In 1774, Father Francisco Palou set up a cross at the El Palo Alto tree to mark a possible mission site. In his diary, Father Francisco Palou noted that the area around the El Palo Alto "appeared suitable for a mission" with "good lands for raising crops, pasturage, firewood, timber and water." However, two years later, the site was rejected by Juan Bautista de Anza and Father Pedro Font. The water supply from the San Francisquito Creek was deemed to be insufficient because it dried up during the summer; the mission site was moved to Santa Clara.

In 1850, a highway from San Francisco to San Jose was built and this highway passed close to the El Palo Alto, which likely brought it prominence. In 1863, the San Francisco & San Jose Railroad Company (later acquired by Southern Pacific) constructed a railway between the two cities and the railroad passed by the tree. The stop at the creek near the tree was called "Big Tree Station." The tree was featured in Southern Pacific's advertising.

Loss of one trunk & Reinforcement

The El Palo Alto originally had two trunks until some time between 1875 and 1882 when one trunk fell down, perhaps due to heavy rainfall and erosion of the creek bank or due to a subterranean stream. Since erosion of the San Francisquito Creek's banks threatened the tree, the Stanford family reinforced the creek bank with a wooden bulkhead; in 1904, Stanford replaced the bulkhead with a concrete wall, which was further reinforced by Southern Pacific in 1909.

In the early 1900s, Stanford students had a tradition of climbing the tree and mounting a flag as high as possible on the tree. In 1909, a Stanford student or employee became marooned on the tree and had to be rescued by other students at night.

Declining Health

Following the installation of the railway, El Palo Alto was threatened by smog and disruption of roots. In 1902, the adjacent railroad doubled to two tracks and by the 1920s, 70 trains passed the tree each day. By the late 1920s, the El Palo Alto was noted to be dying as train soot had suffocated the leaves of the upper limbs and nearby wells had lowered the water table. El Palo Alto was measured to be 162 feet tall in 1930; it is now only 110 feet tall.

Preservation of El Palo Alto

The Native Sons of the Golden West assumed control of the tree, though a land lease, in 1922. In 1925, a half acre of land surrounding the tree was converted into a park, now known as El Palo Alto Park. The Park includes a pedestrian pathway connecting Palo Alto and Menlo Park. Since 1978, the City of Palo Alto has leased the land. Except for the top of the tree, which was cut off because it died, the El Palo Alto has been saved by preservation efforts led by the City of Palo Alto, local arborists, Stanford University and Southern Pacific. Efforts to preserve El Palo Alto continue to this day, including ground-penetrating radar, air-spade excavation, drone monitoring of the tree's crown and a prism attached to its top to track movement.

The El Palo Alto tree remains on the City of Palo Alto seal, the Stanford University seal and as a mascot for the Stanford University Marching band. In 1932, the State of California designated the nearby area "Portola Journey's End" as a California Historical Landmark. The tree itself was registered as a Point of Historical Interest in 1974. In 2004, seedlings from the tree were planted in the American Forests Historic Tree Nursery in Jacksonville, Florida. Hopefully, El Palo Alto will remain intact for the enjoyment of many future generations.

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